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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,833	06/27/2001	Kazuchika Sato	15162/03800	3723

24367 7590 10/20/2004

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EXAMINER

VIEAUX, GARY

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,833

Applicant(s)

SATO ET AL.

Examiner

Gary C. Vieaux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because figure 7, indicator 215, FRAME is incorrectly spelled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Claim 13 improperly references dependency on later claim 14. Based on the language of the subsequent claims, claim 13 will still be examined for patentability with a presumed dependency on claim 14 material as recited. Appropriate action is required.

Claim 15 is objected to because of the following informalities: on line 3 of claim 15, page 38, "blocks" is misspelled as "bocks". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al. (US #4,475,131) in view of Inagaki et al. (US #6,084,634.)

Regarding claim 1, Nishizawa teaches a digital camera, comprising an image pick-up element that can read out pixel data in a nondestructive manner (col. 3 lines 17-21) and data read-out means for reading out pixel data in a destructive manner before a

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main exposure and pixel data in a nondestructive manner during said main exposure (col. 4 lines 25-43.) However, Nishizawa does not teach specifying means for specifying addresses of a plurality of pixels thinned out among all pixels of said image pick-up element, the plurality of pixels then being employed with the data readout means for reading out pixel data of said specified plurality of pixels in a destructive manner before a main exposure and pixel data of said specified plurality of pixels in a nondestructive manner during said main exposure.

Nevertheless, Inagaki is found to teach specifying means for specifying addresses of a plurality of pixels, which can be read out in a non-destructive manner, thinned out among all pixels of said image pick-up element (col. 10 line 65 – col. 11 line 10; col. 11 lines 24-40.) In light of the teaching in Inagaki, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the specified plurality of thinned out pixels with the data readout means of the digital camera as taught by Nishizawa. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching in order to obtain smooth motion of images displayed on a display/electronic view finder, while still allowing for capture of the entire image during exposure.

Regarding claim 2, Nishizawa and Inagaki teach all the limitations of claim 2 (see the 103 rejection to claim 1 supra), including teaching a digital camera further comprising a display which displays a live-view image by using said pixel data read out in said destructive manner before said main exposure and said pixel data read out in

said nondestructive manner during said main exposure ('131 col. 6 lines 30-47; '634 col. 11 lines 41-50.)

Regarding claims 4 and 7, although the wording is different, the material is considered substantively equivalent to claim 1, as discussed above.

Regarding claims 5 and 8, although the wording is different, the material is considered substantively equivalent to claim 2, as discussed above.

Claims 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al. (US #4,475,131) and Inagaki et al. (US #6,084,634) as applied to claim 1 above, and further in view of Blissett et al. (US #5,053,876.)

Regarding claim 3, Nishizawa and Inagaki teach all the limitations of claim 3 (see the 103 rejection to claim 1 supra), except for a detector that performs a blur-detection by using the read out pixel data.

Nevertheless, Blissett teaches the use of pixel data for detection of motion relating to blur/camera shake, in which blur is detected by pixel intensity differences found between frame comparisons (col. 2 lines 7-67.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Blissett, in which the generated pixel data is employed to detect blur, with the pixel data read out in the digital camera as taught by Nishizawa and Inagaki. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teachings so that the digital camera may realize image stabilization, through first detection and then correction of image data.

Regarding claims 6 and 9, although the wording is different, the material is considered substantively equivalent to claim 3, as discussed above.

Claims 3, 6, and 9-14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al. (US #4,475,131) and Inagaki et al. (US #6,084,634) as applied to claim 1 above, and further in view of Jung et al. (US #6,002,431.)

Regarding claim 3, Nishizawa and Inagaki teach all the limitations of claim 3 (see the 103 rejection to claim 1 supra), except for a detector that performs a blur-detection by using the read out pixel data.

Nevertheless, Jung teaches a detector that performs blur detection based on motion vectors determined from read out pixel data (col. 2 lines 45-55.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Jung, in which the generated pixel data is employed to detect blur (motion), with the pixel data read out in the digital camera as taught by Nishizawa and Inagaki. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teachings so that the digital camera may realize image stabilization, through first detection and then correction of image data.

Regarding claims 6 and 9, although the wording is different, the material is considered substantively equivalent to claim 3, as discussed above.

Regarding claim 10, Nishizawa teaches a digital camera, comprising an image pick-up element that can read out pixel data in a nondestructive manner (col. 3 lines 17-21) and data read-out means for reading out pixel data in a destructive manner before a main exposure and pixel data in a nondestructive manner during said main exposure (col. 4 lines 25-43.) Inagaki teaches a digital camera, comprising an image pick-up element that can read out pixel data in a nondestructive manner (col. 10 line 65 – col. 11 lines 10), specifying means for specifying pixels contained in a block of small area among all pixels of said image pick-up element (col. 11 line 62 – col. 12 line 21.) In light of the teaching in Inagaki, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the pixels contained in a block of small area with the data readout means of the digital camera as taught by Nishizawa. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teaching in order to obtain smooth motion of images displayed on a display/electronic view finder, while still allowing for capture of the entire image during exposure.

Inagaki further teaches elimination of fixed pattern noise from a block of pixels read out during an exposure state, by canceling the calculated noise based on fixed pattern noise data held in FNP data memory (col. 28 line 55 – col. 29 line 49.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to also incorporate the fixed pattern noise elimination and memory means as taught by Inagaki, with the digital camera as previously taught by Nishizawa and Inagaki. One of ordinary skill in the art at the time the invention was made would be further motivated to

combine these teachings as a means of eliminating fixed pattern noise from the pixel data associated with the block of pixels read out.

Furthermore, Jung teaches a detector that, once noise has been removed, adds pixel data (col. 3 lines 44-60), and then performs blur detection using the added pixel data (col. 2 lines 45-55.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Jung, in which the generated pixel data is employed to detect blur (motion detection) in multiple regions, with the single, small block area pixel data read out in the digital camera as taught by Nishizawa and Inagaki. One of ordinary skill in the art at the time the invention was made would be motivated to combine these teachings so that the digital camera may realize image stabilization, through first detection and then correction of image data; with the related image data of the small block being more exact due to the previous removal of noise prior to detection and correction.

Regarding claim 11, Nishizawa, Inagaki and Jung teach all the limitations of claim 11 (see the 103 rejection to claim 10 supra), including a teaching by Jung concerning utilizing a plurality of blocks of small area among all pixels. Jung teaches the use of multiple motion detection regions when correcting blur (fig. 5A.) It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the digital camera, as taught by Nishizawa, Inagaki and Jung in claim 10, function in a similar fashion with a plurality of blocks of small area among all pixels. One of ordinary skill in the art at the time the invention was made would be motivated to make use of a plurality of blocks of small area among all pixels so that blur detection

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could be conducted in more than one region, while still providing faster processing than if blur detection was conducted among all pixels of the image pickup element.

Regarding claims 12 and 14, although the wording is different, the material is considered substantively equivalent to claim 10, as discussed above.

Regarding claims 13 and 15, although the wording is different, the material is considered substantively equivalent to claim 11, as discussed above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakurai et al. (US #6,784,928) discloses a similar pixel thinning process.

Kudo (US #6,501,503) discloses comparing picture image signals to provide warning of camera shake.

Tamura et al. (US #4,586,029) discloses blur detection and correction based on image data.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary C. Vieaux whose telephone number is 703-305-9573. The examiner can normally be reached on Monday - Friday, 8:00am - 4:00pm.

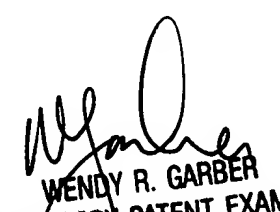
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gary C. Vieaux
Examiner
Art Unit 2612

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